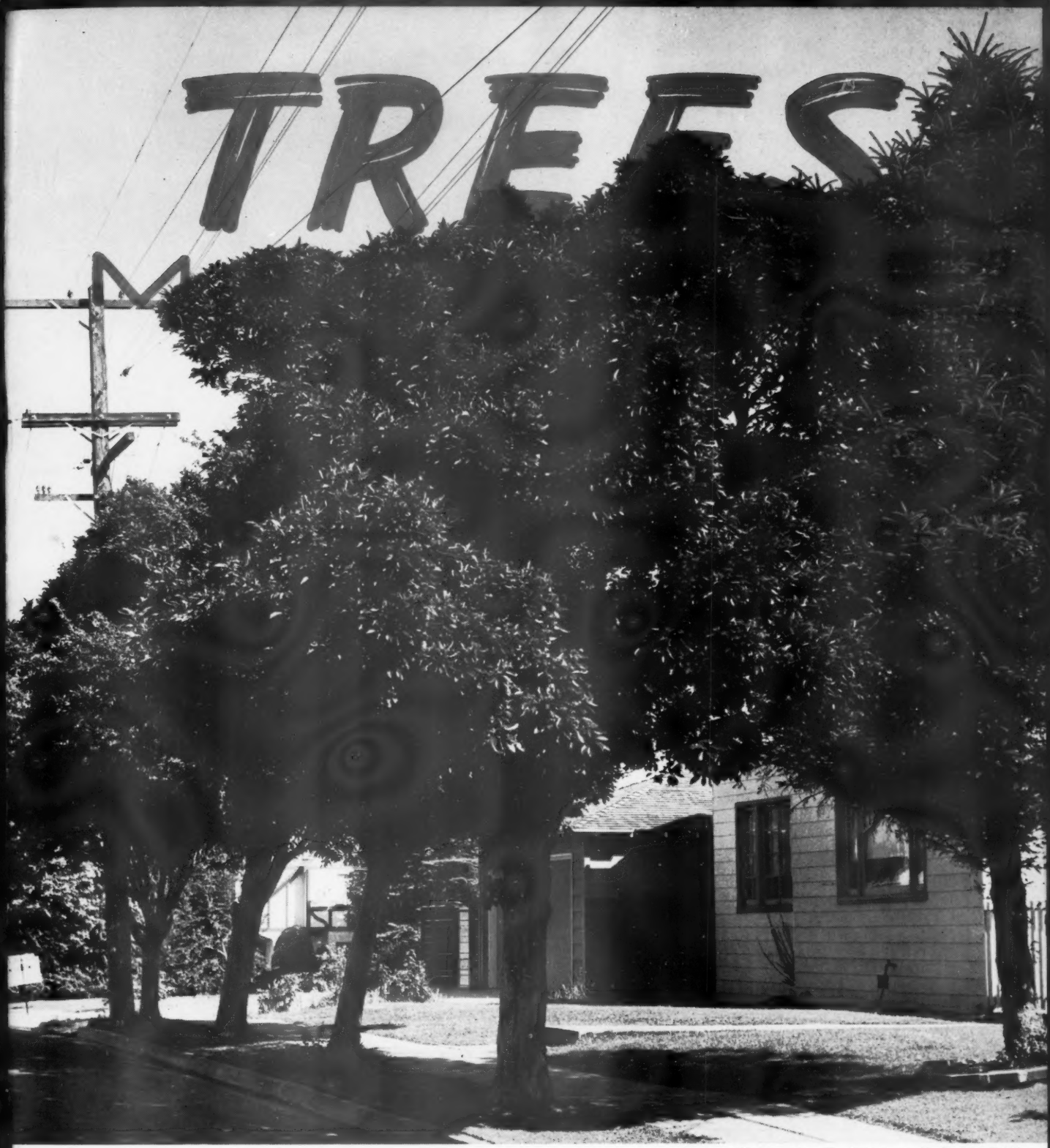

Photo courtesy Frank Andeson, Burlington, Calif.

A Street Tree That Fits—The Beautiful Lavalle Hawthorn—In 3' Treelawn and Under Low Wires—30 Yrs. Old—No Conflict

Be There—30th National Shade Tree Conference—Atlantic City—Aug. 30 - Sept. 3

The Story of The Moraine Locust — John D. Siebenthaler

Tree Trimming To Clear Public Utility Wires — Norman E. Gillespie

July-August, 1954 — *The Journal of American Arboriculture* — Vol. 14 No. 5

TOUGH

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NATIONWIDE SALES AND SERVICE

TREES Magazine is a bi-monthly Journal published at Olmsted Falls, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., 7621 Lewis Rd., Olmsted Falls, Ohio. Subscription by mail $2 per year; outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With .... EDW. SCANLON

■ AL DE SHANO, now d. b. a. THE JEFFREY MFG. CO., OUT OF FALMOUTH, Ky., had his NEW TREE MOVER at the RANCHO not so long ago. It looks like a REAL WELL THOUGHTOUT JOB — you'll see it at ATLANTIC CITY.

■ **The GRAPEVINE says that DR. LEWIS LIPP of the ARNOLD ARBORETUM is soon to take the DIRECTORS position at the HOLDEN ARBORETUM (near Cleveland — POTENTIALLY THE RICHEST setup in the land — but OLD IDEAS.). (It's official.)**

■ Two DISTINGUISHED DUTCH NURSERYMEN were dinner guests at the RANCHO several weeks ago. HENRI DEN OUDEN of the OLD FARM NURSERIES and HERMAN GROOTENDORST of the F. J. GROOTENDORST & SONS nursery, both of BOSKOOP, HOLLAND. Got some EXCELLENT OBSERVATIONS on fine ornamental TREES IN EUROPE that would SEEM TO INDICATE that a trip by A. T. W. to ENGLAND AND THE CONTINENT is a serious consideration for the SUMMER OF 1955.

■ **Have YOU SEEN a nice specimen of the WINE-LEAVED SYCAMORE MAPLE lately. Well IT'S EXQUISITE. Saw a magnificent one on a RECENT TRIP around TOLEDO WITH JOE SWEENY. The BOTTOM SIDE of the LEAF is an IRIDESCENT WINE COLOR, like BURGUNDY, while the TOP OF THE LEAF is a RICH DARK GREEN. When a BREEZE RIFFLES THE LEAVES you are TREATED to a BEAUTIFUL SIGHT. It holds this TWO TONE EFFECT from SPRING TO FALL. This tree is INFINITELY MORE BEAUTIFUL AND ORNAMENTAL than the DARK-LEAVED NORWAYS which turn rather blowsy in late summer. AS A STREET AND HOME TREE this WINE-LEAVED SYCAMORE MAPLE should have HIGH PRIORITY—also, and VERY IMPORTANT, because of its TOLERANCE OF DRY SOILS and URBAN ATMOSPHERIC CONDITIONS.**

■ TWO OTHER TREES that are A CINCH to make the MAJOR LEAGUES are, the WHITEBEAM MOUNTAIN-ASH, (Sorbus aria lutescens), and the AMERICAN HOPHORNBEAM (Ostrya virginiana). Both are DEFINITELY IN THE SMALL TREE CLASS—25' to 30', and they are HIGHLY ORNAMENTAL, LOW MAINTENANCE trees for STREETS; with CHARACTER AND BEAUTY for HOMES. The SORBUS is a SINGLE LEAVED SPECIES and is ALREADY IN USE by STREET TREE PLANTERS in various parts of THE COUNTRY. The HOPHORNBEAM has been HIGHLY RECOMMENDED by EVERY AUTHORITY FOR MANY YEARS, but LIKE MANY other SUPERIOR TREES its USE LAGGED because FAST GROWING JUNK was EASIER AND CHEAPER TO GROW.

■ Here's where OUR SENSE OF VALUES has skidded to — a CLEVELAND DISC JOCKEY was recently "lured" to N. Y. by a 75 GRAND a year offer — for PLAYING RECORDS yet — the skit here was called "MOONDOG" something or other — YIPE.

■ **We ARE SADDENED to learn, from KARL AMALIA, of the SUDDEN PASSING of a DEEPLY ADMIRED FRIEND OF THE TREES, RAY KOON. RAY had only retired on June 1st as DIRECTOR OF THE WALTHAM FIELD STATION. He was secretary of the MASSACHUSETTS ARBORISTS ASSOCIATION and a lifetime PROPONENT OF GOOD TREE CARE. His MANY FRIENDS THRUOUT THE COUNTRY will miss RAYS FRIENDSHIP.**

■ AS OF NOW, July 12th, we HAVEN'T HAD ENOUGH RAIN for the past 30 days TO SETTLE THE DUST. CALIFORNIA isn't the ONLY PLACE you can PLAN A PICNIC two months ahead without WORRYING ABOUT RAIN.

■ **CONGRATULATIONS to ROGER COGGESHALL — Roger has just BEEN APPOINTED PROPAGATOR at the ARNOLD ARBORETUM. We know Roger will bring to the post lots of energy and SOUND KNOWLEDGE and that he is a WORTHY SUCCESSOR to a FAMOUS LINE of PROPAGATORS at the ARBORETUM.**

■ Observed an INTERESTING THING the other day. LAST FALL (53) we PLANTED A STREET of GOLDEN-RAIN (KOELREUTERIA PANIC). Then THIS SPRING the REMAINDER of the STREET, which was shaped like a huge horseshoe, WAS PLANTED. The FALL PLANTED TREES have PRODUCED FLOWERS this SUMMER and look VERY THRIFTY — the SPRING PLANTED ONES are JUST FAIR and just AMBLING ALONG. This DOESN'T HOLD GOOD for all species tho, we HASTEN TO MENTION. It is MY EXPERIENCE WITH ZELKOVA that it handles BEST IN THE SPRING, and so on for OTHER SPECIES.

■ **At long last — FINALLY HAD THE OPPORTUNITY to use the SMALL WHEELBARROW TYPE SPRAYER I obtained from the OLD MASTER GEO. TIRRELL this spring. It's really A GUTTY LITTLE RASCAL and MAINTAINS HIGH PRESSURE excellently. TOP this off with the NEW BETE SPRAY NOZZLE and you have a LITTLE OUTFIT that is HARD TO BEAT for a SMALL JOB.—Know what I USED IT FOR FIRST?—to WATER some of my SUPER DUPER FASTIGIATE GINKGOS—did a swell job—boy WE HAVEN'T HAD RAIN here FOR SO LONG the webbing is SHRIVELING UP IN THE DUCK'S FEET.**

■ SEVERAL WEEKS ago JOE DIETRICH waxed QUITE ELOQUENT in introducing the speaker at a GREENWICH KIWANIS meeting. The introduction TOOK 15 MINUTES and LEFT ONLY 4 MINUTES for the speaker—ED CONNELL OF STAMFORD — that's really a MASTER FILIBUSTER when you CUT ED CONNELL down to 4 MINUTES.

■ **Understand that ED just PURCHASED one of GEO. TIRRELLS PORTABLE SPRAYERS—it's a honey, guys you WANT TO SEE IT.**

■ The following is SWORN TO AS BEING ON THE UP AND UP by RAY LEE, tree supt. for RALPH SYNNESTVEDT AND ASSOCIATES:—An ILLINOIS MOTHER recently PRESENTED PAPA with a MALE HEIR, after TWO DAUGHTERS. Papa promptly ordered "A CLIMBING TREE" planted so Junior COULD BECOME A TREE SKINNER when he grows up—It's ALL TRUE except the PART ABOUT BECOMING A SKINNER—the tree was PLANTED LAST SPRING—an APPLE.

■ **If you HAVE TO STRUGGLE with a LOT OF LEAVES on a BIG LAWN, do what I did AT THE RANCHO last fall —get one of those LEAF CHAWING GIZMOS. They're REALLY THE NUTS and sure BEAT RAKING all to pieces. There's ONE ADVERTISED in the back end someplace that's A SWEETHEART. Give it A WHIRL.**

■ The SUMMER MEETING of the OHIO CHAPTER, N.S.T.C. will be held AUGUST 11th in little old OLMSTED FALLS at the "RANCHO COSTA PLENTA PARA LOS ARBOLES." We'll look at the "TAILORED TREES," then take a SASHAY DOWN THRU some of the CITY OF CLEELAND STREET PLANTINGS on the WEST SIDE. You'll get a LETTER on arrangements FROM CHAD —if it hasn't already arrived.

■ **OHIO LOST A FINE NURSERYMAN and a GRAND FELLOW when HAROLD BURTON (Hilltop Nursery, Casstown) PASSED AWAY SUDDENLY ON MAY 25th. Harold was very active in ALL PROGRESSIVE MOVEMENTS involving his profession, and his FRIENDLINESS AND WILLINGNESS TO PITCH IN will leave a BIG GAP IN OHIO ranks.**

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TREES MAGAZINE
7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

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July-August, 1954 **Journal of the National Arborist Association** Vol. 14 No. 5

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

A NEW ERA IN TREE USE IS HERE

Dropping editorial anonymity, which of course is not exactly anonymity in TREES Magazine, I should like to discourse on a subject of intense and deep interest to me, and to many of you. This subject is the door that has been opened recently, that is by constant shoving and ramming in the past ten years or so, and which has revealed the fallacy and narrowness of the approach that had been made to the use of trees on city streets, and for that matter around homes—in fact everywhere.

It has been a personal matter with me. It has been a subject in which I have always been deeply interested. Interested in fact to the point of obsession. Why? I don't know. Just one of those things, like why does this fellow go overboard on dogs, golf, or guns, or fishing—with me it's trees. I think its much nicer and much more interesting and certainly of great tangible value to the community and the country, But, let's just say that's my opinion.

Anyway, for years I have searched the literature, the botanic gardens, the arboreta and private tree collections for unknown, new or little known trees that could better serve the many purposes that trees can serve in our complex communities. Obviously, anyone with any powers of observation, could easily discern that in the past twenty-five years, the half dozen or so species that had so completely dominated the ornamental field for a half century or better, were beginning to realize the dire predictions of trouble and conflict that a few hardy souls in that era had tremulously uttered. It wasn't popular then to say anything of a derogatory nature about the American elm. To do so was sacriligious. But anyway the little voices became louder, and as the hundreds of thousands of elms planted so unwisely in the twenties and thirties began to grow out of the "nice" stage and into the forest giant stage, the fun began. There just wasn't the money to remove these giants, or to repair the damage they had inflicted. Then came some flickerings of thought.

My first two impressions of the direction in which lay the answer to this terrific overburden of civic trouble came, first, when I became acquainted with Bill Groen, Superintendent of Parks at Whittier, California. Bill was a genius at fitting trees to a street and a great number of beautiful streets of "unusual" trees are testimony to his ability and perception. Bill raised shrubs to the status of street trees by the simple expedient of pruning them to standards—Oleander, the Strawberry tree (Arbutus unedo), Pittosporum rhombifolium, Bauhinia and so on. They made lovely streets and they made a profound impression on me. They were trees that fit the street — they didn't overpower, or smother or wreck it.

The other impression came a few years after this experience in Whittier when I had occasion to go through Rochester, N. Y. There I saw the splendid street of upright Sugar maples and a nice street of upright Norway maples planted by Bernard Slavin, their world famous, now retired, park superintendent. Unfortunately Mr. Slavin did not extend the street tree program beyond the planting of these few streets

of upright trees, and strangely enough no further work of that character has been done there since. However, it was enough. These uprights coupled with the fine small trees at Whittier began to assume a pattern. This was the answer—small trees, globes, uprights—fit a tree to the space available—we have the trees, it is merely a matter of using them correctly.

Many writers and preachers have picked up the theme of using trees correctly and it is gratifying to see how this philosophy has spread and continues to spread as the reason for it begins to appeal to more and more public tree planters throughout the country.

Now at last it is certain that the "new era in tree use" is here to stay.

Three Organizations Co-Sponsor Pioneering Conference

With considerable nationwide interest having been aroused on the announcement that, for the first time in the history of the conflict of trees, street lights and wires, the top executives of each of these industries will sit down together to talk the problem out, plans for the meeting are progressing nicely.

The first "Street Tree and Utility Conference" will be held March 3rd and 4th, 1955 at the Wade Park Manor, Cleveland, Ohio.

The Conference was instituted for the purpose of resolving a long range program of tree, wire and street light usage, and installation whereby all could live harmoniously on streetsides with a minimum of conflict and expensive damage, one to the other. As in all other conflicts involving the human element there is a solution and it must be sought. The present disorganized approach to this important phase of city planning and public service is to say the least not scientific. It can be, and to this end this important conference has at last become a definite reality and plans and speakers and titles are in the development stage.

For many years there has been a pulling in different directions of the three principals involved in this conflict. It seemed to be stalemated and very definitely was because of the traditional habit of tree planters to stick to the use of the forest giant types of street trees. Obviously these oversize, out of scale trees could not very well be induced to grow under, or even very near the conventional overhead wire installations that practicality indicated. At the same time these immense trees created a hazard and a problem with street lighting programs. There seemed no way out of the predicament other than to patiently clear the wires of branches and pray.

With the advent of a new philosophy of correlated tree use, after the war, and the installation of many demonstration plantings in Cleveland followed by similar plantings in New Haven, Toledo, Baltimore, Youngstown, Milwaukee, Greenwich, Warren, Ohio, Lansing and several other cities, the pattern for a complete revamping of street tree thinking and use was well established. This new philosophy offered the possibility of a common sense approach to the solution of the years old utility and tree conflict. The "Street Tree and Utility Conference" is the first step in the direction of compatibility and eventual peace.

Co-sponsoring the conference, instigated by the *Shade Tree Selection Committee* of the NATIONAL SHADE TREE CONFERENCE will be the *Transmission and Distribution Committee* of the EDISON ELECTRIC INSTITUTE and the *Street Lighting Committee* of the ILLUMINATING ENGINEERING SOCIETY. These powerful representatives of the three industries involved are working enthusiastically toward broadening the ray of hope this conference portends for the future service and esthetic possibilities that are certain to result.

John W. Anderson, Chairman, EDISON ELECTRIC INSTITUTE *Committee*

Kirk M. Reid, Chairman, ILLUMINATING ENGINEERING SOCIETY *Committee*

Edward H. Scanlon, Chairman, NATIONAL SHADE TREE CONFERENCE *Committee*

Members of the various committees engaged in this pioneering conference are:

Edison Electric Institute—Committee on Transmission and Distribution.

John W. Anderson, Chairman
Philadelphia Electric Co.
2301 Market St.
Philadelphia 3, Pa.

(Continued on page 26)

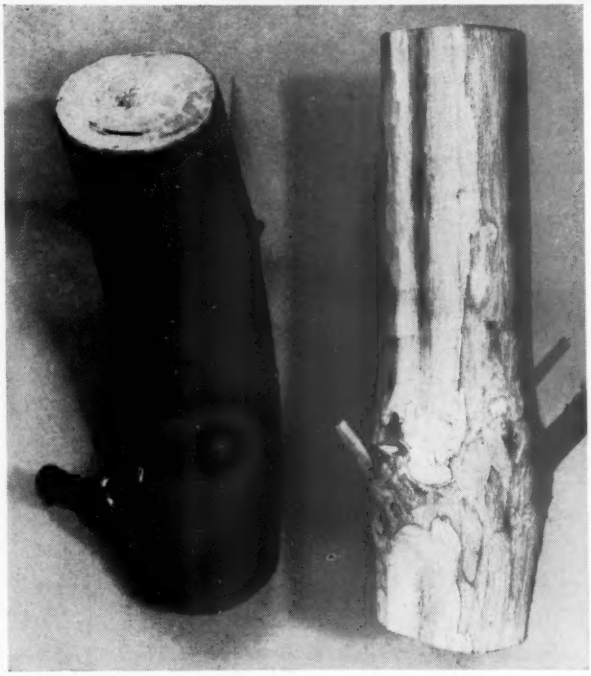
PLANT AMERICA—WISELY

Maple Wilt

By Malcolm A. McKenzie,
Director of Shade Tree Laboratories,
University of Massachusetts,
Amherst, Massachusetts

Contribution No. 960 of the Massachusetts Agricultural Experiment Station, Amherst, Mass.

(Fig. 1) The late Professor A. Vincent Osmun beside a young Norway maple that wilted suddenly in June 1943 and shortly thereafter was completely dead.



(Fig. 2) Typical streaking associated with infection by Maple Wilt fungus in trunk of same Norway maple shown in Fig. 1.— (July 7, 1943.)

Disease Diagnosis Problems

Any damage apparent on maple foliage always awakens fears of a local outbreak of the serious and often fatal disease of maples caused by a wilt disease fungus of the genus verticillium. The fears are fully justified in sad experience with bona fide maple wilt. But currently a wide variety of maple troubles are commonly confused with the genuine wilt disease. In particular, record-breaking spring rains have favored the development of fungus diseases confined chiefly to leaves on lush growth of foliage. There are also a number of additional troubles confused to a lesser extent with the true maple wilt, such as the 1953 summer drought damage, death from dirt fillings around roots, injury from poor location, all kinds of construction work and gas injury.

The wide discrepancies in rumors and reports on tree damage, death, or recovery from maple wilt may sometimes be traced to original faulty diagnosis of trouble. Also, strains of the verticillium fungus probably vary considerably in virulence or ability to produce disease. Furthermore, complications in accurate field diagnosis of maple wilt arise from the fact that not all green color in maple wood is a result of infection by the true wilt fungus. Even when the greenish color is a result of infection by the verticillium fungus, the color may be restricted to tree trunk or base instead of spreading uniformly into branches bearing wilted leaves.

Investigations

In Figure 1, the late Professor A. Vincent Osmun, formerly head of Department of Botany at the University of Massachusetts, is shown standing beside a young Norway Maple which wilted suddenly in June, 1943. The photograph taken on July 1, 1943, shows uniform wilting throughout the entire tree. Rapid deterioration followed.

On July 7, 1943, wood of branches was examined for typical greenish discoloration. No discoloration appeared in wood of branches but in wood of trunk, discoloration was evident as shown in Figure 2. The fungus *verticillium* sp. was isolated in tissue plants in artificial culture media from the trunk discoloration but no fungus was present in similar tissue plantings from branches.

Examination of twig specimens from maple trees reported to be wilting sometimes fails to give any evidence of the verticillium fungus or other cause for wilting. The details just outlined may help to explain this situation which has been previously reported by other writers, but is still a source of concern with practicing professional arborists seeking a laboratory diagnosis without mutilation of the trees.

Apparently severe wilting does not always accompany streaking or infection in maple wood since typical discoloration sometimes appears in cross section of older annual growth rings in the absence of wilted foliage. Cross section in Figure 2 shows discoloration in successive annual rings although wilting did not occur until year of death.

Not even all maples showing wilted foliage die suddenly or even in several years. The sugar maple shown in Figure 3 was photographed on September 6, 1950. Wilted parts were pruned and from them the presence of the verticillium fungus was confirmed in laboratory test. Yet, the tree is apparently vigorous today (July 6, 1954).

Sugar maple (Figure 3) is less readily destroyed by the wilt than the highly susceptible Norway Maple (Figure 1) and at least six other species or varieties

(Continued on page 19)

Boardwalk Convention For Treemen At Atlantic City

For the first time in its history the National Shade Tree Conference will meet in one of the nation's most famous play places—Atlantic City. The 30th convention in the series that started in 1925, is scheduled for the period from August 30 to Sept. 3rd at the Haddon Hall Hotel on the boardwalk.

As usual a fine educational program has been arranged—not as tight as in past years, there is more time for field demonstrations, exhibits and swimming. While the details are not yet available an unusual and very entertaining ladies program is nearing completion. The report is that this part of the conference will surpass past meetings and the ladies are urged to attend.

The National Shade Tree Conference in its 29 years of great service has become an institution in American arboriculture. The proceedings containing the hundreds of authoritative papers by the nation's outstanding authorities of the era has become the standard reference work throughout the country on entomological, pathological and functional disorders of ornamental trees. In addition philosophies of tree use and selection have been first recorded here, in addition to many dozens of related topics having to do with the cultural and administrative problems of ornamental trees.

A trip to the National Shade Tree Conference is an unforgettable experience and no matter how often you may have attended the prospect of the next conference causes a ripple of expectation to course through one's veins. The conference is a must for every treeman who is devoted to the best interests of the trees he serves.

TENTATIVE PROGRAM

30th ANNUAL NATIONAL SHADE TREE CONFERENCE CONVENTION
Haddon Hall Hotel, Atlantic City, New Jersey
August 30—September 3, 1954

Sunday, August 29th
P. M.
2:00 Executive Committee Meeting

Monday, August 30th
A. M.
9:00 Registration
Visit Commercial Exhibits
10:00 Meeting of National Arborists Association
P. M.
1:30 Registration
Visit Commercial Exhibits
Meeting of National Arborist Association
Evening
8:00 Informal Party—A Gala Affair Sponsored by: New Jersey Federation of Shade Tree Commissions
Arborists Association of New Jersey
New Jersey Society of Certified Tree Experts

Tuesday, August 31st
A. M.
8:00 Registration
Visit the Commercial Exhibits
10:00 Official Opening
Invocation
Address of Welcome
Appointment of Convention Committees
10:45 **Understanding Soils**—Dr. N. A. Mitcheltree, New Jersey Agr. Exp. Station, New Brunswick, N. J.
P. M.
1:30 Business Session
Board of Governors in Session
Election of Permanent Committee Members
Report of Executive and Budget Committee
Report of Secretary, Treasurer and Editor
2:30 **Chemotherapy Studies — Research Project Report**—Howard S. Potter, Dept. of Botany, University of Maryland, College Park, Maryland
3:10 Session on Insect Pest Control
The Control of Some Gall Insects—Dr. R. B. Neiswander, Dept. of Entomology, Ohio Agr. Exp. Sta., Wooster, Ohio
The Nature and Control of Leaf Miners of Trees and Shrubs—Dr. J. G. Matthysse, Dept. of Entomology, Cornell University, Ithaca, N. Y.
Termite Control in Shade Trees—Dr. Spencer N. Davis, Dept. Plant Pathology, N. J. Agr. Exp. Station, New Brunswick, N. J.
4:10 **The Place of Time-Elapse Photography in Arboriculture**—John Ott, Evanston, Illinois
Evening
7:00 **Dinner Meeting** of National Arborists Association
8:00 **Municipal Arboriculture and Forestry Meeting**
Discussion Session for city foresters, park superintendents and others interested in Public Area Tree Management Problems

Wednesday, September 1st
A. M.
9:15 **Tree Spray Oils**—Dr. E. H. Smith, Division of Entomology, New York State Agr. Exp. Sta., Geneva, New York
10:00 Buses leave for Atlantic City Country Club
Contests and Commercial Equipment Demonstrations
P. M.
12:30 **Luncheon**, Atlantic City Country Club
1:30 **Commercial Equipment Demonstrations**
Evening
8:00 **Meeting of Public Utility Arborists**—Kenneth Flaig, Fort Wayne, Indiana, Presiding

Thursday, September 2nd
A. M.
9:00 Visit Commercial Exhibits
9:30 **What the New Jersey License Law has Accomplished**—P. E. Alden, Shade Tree Commission, Kearny
10:00 **Tree Moving Practices and Problems**—H. M. Van Wormer
10:45 **Business Meeting**
Committee Reports
Recommendations for 1956 and 1957 Convention Cities
Election of Officers
P. M.
2:00 **The Place and Purpose of a National Arbor Day Association**—Harold D. Piser, Flushing, L. I.
2:30 **Trees for Street and Lawn Planting**—Dr. Henry Skinner, U. S. National Arboretus, Washington, D. C.
3:30 **What You Will See in Santa Barbara** (Film)—A preview of the 1955 Convention City
4:00 **Plant Clinic** — Dr. Spencer Davis, Dept. of Plant Pathology, New Jersey Agr. Exp. Sta., New Brunswick, N. J.
Evening
6:00 **Cocktail Hour**
7:00 **Annual Banquet** — Entertainment and Dancing

Friday, September 3rd
A. M.
9:30 **Air-layering as a Method of Propagation for Arborists**—Dr. P. P. Pirone, New York Botanical Garden, New York City, N. Y.
11:00 **Budworm City** — Spruce Budworm Control—Color film of 1952 New Brunswick Spray Operations. Film furnished by Forest Biology Division, Department of Agriculture, Ottawa, Canada
11:45 Adjournment

New Tree Co. Formed

The Muncie Tree Surgery Company and the newly formed Duling Tree Expert Company take pleasure in making the following joint announcement:

The Duling Tree Expert Company (owned and operated by Mr. John Duling) has purchased the part of Muncie Tree Surgery Company known in the profession as "private work." Mr. Duling plans to offer complete tree service to all private individuals in this area. He has been employed by Muncie Tree Surgery Company for many years and is well qualified to serve you in this field.

In the future Muncie Tree Surgery Company (owned and operated by Mr. O. G. Ottinger) will be engaged exclusively in performing skilled tree service for public utility companies in Indiana and adjoining states.

The Muncie Tree Surgery Company wishes to take this opportunity to thank their many friends and customers for the pleasant business relations we have enjoyed in the past and respectfully recommend that you continue to request any tree service you might need from the Duling Tree Expert Company.

PLANT AMERICA—WISELY

Tree Trimming To Clear Public Utility Wires

By NORMAN E. GILLESPIE
President Interstate Tree Expert Co.

(Presented at Tree Wardens, Arborists and Utilities Conference) Utility Day, March 24, 1954
University of Massachusetts,
Amherst, Mass.

Ever since the invention of electricity and telephone communications, it has been deemed advisable to run wires on poles along the streets as the best means of servicing the general public. This has brought about many problems, particularly with tree interference. During the same period of construction of many of these lines along the street, the communities were also planting trees for the general beautification of the community. If these trees had not grown tall there would never have been any problem. The fact is that they did grow and, in a short time, a great problem presented itself. I believe that we have now pretty well resolved this problem but I believe that there must be mutual understanding and agreement by all parties so that the public may be served.

I believe that each and every one is vitally interested in Public Relations. The Utility Company is a public service outfit. The Tree Warden is a servant of the public and the commercial tree surgeon depends on the public for his living. We are all united in one common cause—to best serve the public in every way—therefore, we must respect and appreciate the position of each party.

The utility companies have been granted a clearly defined right-of-way within the highway limits in which to construct their overhead plant. They are entitled to reasonable tree clearance from their wires in order to maintain uninterrupted service to homes and industry.

The Tree Warden is elected by the people in his community to superintend the care of the trees and it is only natural that he will do his utmost to maintain good relations with his fellow taxpayers.

Twenty-five years ago, it was common practice to spur trees and often to lop off large branches without any thought of tree shape or public relations. This work was often done by the linemen. Twenty years ago, commercial tree men adopted a plan of rope climbing and a reasonably good quality of tree pruning. This method prevails in many areas today but, in my opinion, it is obsolete and costly.

In Rhode Island we have adopted a new method of utility tree trimming which has proved conclusively to us as being feasible and practical. I would like to recite facts and figures which prove that *modern mechanical* tree trimming is far superior to the obsolete primitive method formerly employed. We use the hydraulic operated Sky-Worker in conjunction with pneumatic and electric tools and also chip all of our brush as it is removed from the trees. These devices, although requiring an appreciable initial investment, have proven themselves in every way to be the most perfect equipment and method of tree trimming in the public utility field.

It was common practice, under the old primitive method of tree trimming, that each man chose a tree and trimmed it as best he could. It was always awkward for the man working in the tree because he never had solid footing and could not see what he was doing. It was not always possible to remove all dead and dangerous branches because of the precarious position a workman would be required to take in order to perform the work. Cuts were left unpainted and the trees were not properly balanced or shaped. All the brush and debris was left laying under the tree and on the sidewalk until the trash truck could catch up and remove the brush. This delay in cleaning up brush was of great concern to us because the public oftentimes felt that we were removing too much from the tree and, as a result, many unjustifiable complaints were registered and public relations suffered.

With our new Sky-Workers, the men doing the actual trimming always have a good firm footing with no danger of electrocution. There is every opportunity for them to view their operations as they perform them. Consequently they can and do trim the trees properly and leave them in good shape. As the brush is removed from the trees it is immediately disposed of through the chipper. In this way the property owner does not have the opportunity to contemplate the amount of cuttings and is less likely to question the necessity for the amount of pruning that has been done. He does appreciate the better work being done and thus the public relations are improved. It was customary in the past to use a crew of seven men and, I think all commercial tree men will agree, we employed a great number of poorly dressed and unkempt workmen, because who else would climb trees for such little pay?

These new Sky-Workers require only three men; consequently the best men can be used. It is always desirable to have men with an interest in their work and, believe me, these men now have a decent job with decent pay and a guaranteed future. We have a right to expect and we do receive more and better work for the money expended.

I believe that we have now found the answer to modern and proper public utility tree trimming and, I am sure, it is here to stay.

During the nine months that we have been using this mechanical method of trimming trees, we have covered many miles of line. It is extremely noticeable how the quality of the work has improved. The trees are much more shapely; cuts are flushed and painted; all brush has been removed and in the entire area not one complaint or refusal to trim the trees has been received, either by us or the utility company. There have been absolutely no outages to electric or telephone plant caused by tree interruption in this entire area and, at the same time, it has been proven conclusively that the cost of trimming has decreased.

An idea of the relative costs under the present method, in comparison with previous methods, can be obtained by noting that one particular feeder, which had no change in its physical make-up, was trimmed in 1953 at a cost of $5688. This same feeder was trimmed two years previously, using former methods, at a cost of $6184, indicating an eight per cent saving of $496.00 by using the new method. However, it must also be pointed out that in trimming with the new method during 1953 a considerable amount of dead wood that was present during 1954 and which had not been removed, was removed during 1953. In addition, we have trimmed out for our secondary wires and service laterals, a practice which was not followed during 1951.

It strikes me that since we have been using these modern trucks, the general public realizes that we have spent a lot of money to modernize and to improve the quality of our work. They also know that we are doing better quality work and that we are keenly interested in their service by preventing interruptions and caring for their trees.

Our public relations in the areas in which we have used these machines are now so good that I cannot think of any further improvement that can be expected. The utility companies which employ us are so pleased with the protection of their valuable public relations, the improved quality of work and the definite saving to them, that we need not fear competition from primitive tree trimming operations.

In summing up this discourse, may I tell you that during the nine months of continuous operation of this new method of tree trimming, which took in much bad winter weather, we have had won-

(Continued on page 24)

The Story of the Moraine Locust

By John D. Siebenthaler,

The Siebenthaler Co.,
Dayton, Ohio

The Moraine Locust is the result of an effort to have a better shade tree for use on street and lawn plantings than any currently existing.

This search began early in the 1920's when attention was focused on two diseases attacking the American Elm considered then as the most popular shade tree in this country. These maladies, the Dutch Elm disease and phloem necrosis were taking a heavy and rapid toll on trees, regardless of their age, health or apparent vitality.

Particular interest was given to Gleditsia for several reasons; it was a well known fact that the honeylocust thrived in a wide range of environmental conditions including city atmospheres and did not seem at all particular as to soil requirements in so far as acidity or alkalinity were concerned.

In 1927, Dr. E. H. Wilson, of the Arnold Arboretum came to Dayton and asked to be shown the Gleditsia triacanthos inermis which was listed in "The Hall of Fame for Trees." This was located in the downtown area as an old specimen, about 65 feet high and a trunk diameter of about five feet. It had no thorns whatever and Dr. Wilson remarked that honeylocust, especially of the thornless variety was one of the most adaptable and satisfactory trees that he knew of for shade purposes and suggested that this tree might be used as a parent plant for the selection of established types.

A year or so later Dr. Richard P. White, Associate Professor of Plant Pathology in Ornamental Horticulture, Rutgers University, speaking before a meeting of the Ohio Nurserymen's Association recommended the thornless honeylocust as one of the most desirable trees for shade tree use, pointing out its habit of deep rooting providing anchorage against storm hazard, its light foliage which reduced maintenance and its apparent resistance to disease and insect attack.

Further search for information revealed interesting facts or comment.

The parent Moraine Locust on a lawn in Dayton, Ohio. Photo taken in 1950.

Papa John Siebenthaler standing alongside the trunk of the Moraine Locust. Note the similiarity in girth.

First, quoting from the *Treasury of Botany,* a popular dictionary of the vegetable kingdom with which is incorporated a *Glossary of Botanical Terms* edited by John Lindley and Thomas Moore, London and New York, 1889, pt. 1, p. 533:

Gleditschia: "A small genus of thorny leguminous trees, inhabiting various parts of North America and China. They have once or twice pinnated leaves, and small dense spikes of inconspicuous greenish flowers, some of which are perfect, while others are of one sex only." According to this authority, the Gleditsias are legumes.

Many authorities believe honeylocust to be polygamous, that is, bearing imperfect and hermaphrodite flowers on the same plant. The following are references to this characteristic:

Britton, N. L. Manual of the Flora of the Northern States and Canada, p. 530. Henry Holt & Co., New York. 1901.

Gleditsia L.
P. 530.

. . . "and small greenish polygamous flowers in axillary spicate racemes."

. . . "Ovary rudimentary or none in the staminate flowers, in the fertile ones nearly sessile."

Britton, N. L. & Brown, H. An illustrated Flora of the Northern U. S. and Canada and the British Possessions. Vol. II: 338-339. 1913.

Gleditsia L. Honeylocust.
P. 38. *Gleditsia.* L. Sp. Pl. 1056. 1753.

"Large thorny trees, with evenly once or twice pinnate leaves, small stipules, and small greenish polygamous flowers in slender axillary spicate racemes. . . . Ovary rudimentary or none in the staminate flowers, in the fertile ones nearly sessile, elongated or ovoid . . ."

Mathews, F. Schuyler. Field Book of American Trees and Shrubs. P. 268. G. P. Putnam's Sons, New York and London. 1915.

Gleditsia triancanthos
P. 268, par. 3.

. . . "Flowers greenish, in inconspicuous nearly pendent clusters, the staminate and pistillate separate and

(Continued on next page)

The Moraine Locust

Tree on right is the companion tree, a normal fruiting type of the species, planted alongside of the now famous Moraine Locust (left). Note the branching difference and lack of fruit on the Moraine.

(Continued from page 9)

often on different trees, or sometimes combined in one cluster, three inches long. Blooming in May-June."

Still another bit of encouragement came in referring to *Trees of the Southeastern United States* by W. C. Coker and H. R. Tottem:

Gleditsia triacanthos L. Honey Locust.

P. 247, par. 2.

". . . flowers very small, yellowish green, male and female ones borne in separate racemes; fruits long flat many-seeded pods up to 16 inches long, with a rather small amount of sweet edible pulp. . . . In regard to the fruits, we have seen no reference to the fact that individuals are often found that are almost or entirely sterile. Two such specimens (large fine trees but now dead) grew on Glenburnie Farm, Chapel Hill. If this character could be combined with thornlessness, which seems easily possible we should have a very desirable ornamental tree for streets and lawns. Flowering from April 20 to May 9."

Seed was collected from thornless specimens which had desirable shapes including the large tree in which Dr. Wilson was interested. By 1930 we had several thousand seedlings ready for transplanting. All plants which showed any evidence of producing thorns were discarded immediately. The same practice being followed each successive year.

This being one of the three characteristics which we had as an objective. First, we wanted a tree without thorns, secondly, a tree of a desirable shape and third a tree which would not produce pistillate flowers and consequently no seed pods.

It was found that some seedlings, even though seed was collected from seedless trees, developed thorns in their second year; others would not produce them until the third, fourth or fifth year. These trees bearing thorns were separated from those which were thornless. From this latter group those indicating a good form or desired shape even as a young tree were selected, kept for closer observation. It would be difficult to estimate how many seedlings were grown to produce the twenty or thirty selections retained by 1940.

By 1945 the list was down to five specimens, the older of which were then fifteen years of age and none had reproduced thorns nor seed pods. The final selection of the tree known as Moraine Locust was made in 1947 and patent was granted in May of 1949 based on the evidence that this tree was thornless, it bore only staminate bloom and had a desirable shape for a lawn or street use.

The original Moraine Locust was from a crop of one year seedlings harvested in the Fall of 1930 and today having been transplanted three times, under normal growing conditions has obtained a heighth of 40 feet and a trunk diameter one foot above the ground of 22½ inches.

Several other of the selections made during the course of searching for a desirable shade tree still retain excellent characteristics; however, Moraine is the only one which has been individually identified.

Propagating Tilia From Seeds

By Philip A. Barker
University City, Mo.

The reproductive unit of Tilia (Linden or Basswood) is a hard-shelled spherical capsule-type fruit which, in nature, requires anywhere from two to more than seven years for germination. In spite of the many desirable qualities of Tilia for use as street and shade trees, this peculiarity of irregular germination has made it difficult for nurserymen to propogate them from seeds as extensively as might be desired.

Tilia seeds have a highly impermeable seedcoat and a partially dormant embryo and if successful germination is to be attained, both of these natural characteristics must be eliminated and in the above respective order.

The seed coats may be rendered permeable by one of two methods. This consists in placing the fruits in moist granulated peat moss or in loose soil at a temperature of about 68° F. for four months or the seeds, extracted from their fruit coats by hand operation, may be dipped in concentrated sulphuric acid for 20 minutes.

After either of the above two treatments has been made, partial dormancy of the embryo of the seed must be interrupted by subjecting the seeds to an after-ripening period. This is done by placing the seeds in moist granulated peat moss for three to five months during which time the temperature is held at between 34° to 40° F.

Practical application of these methods may be made in two ways. Tilia fruits, gathered the previous fall, may be planted in flats in moist peat moss in June; left outdoors throughout four summer months to render the seed coats permeable and these flats then placed in a cold frame. To reduce temperature fluctuation and prevent freezing, the flats should then be covered with a suitable mulch during the winter. Following such treatment, germination can be expected by the next spring. During times that the summer temperature exceeds 68° F., it is advisable to shade the flats since extreme temperatures at this time may result in the fruits rotting. Such a summer planting delays the seedling production until after the second winter, but it has the advantage of requiring no laborious seed extraction from the fruit coat.

The second practical method for seedling production consists in planting extracted, sulphuric acid-treated, seeds in flats and placing them in mulched cold frames in January. Seedlings will appear the following April or May.

Seedling production, by using either of the above methods, may be expected to amount to 25% of the seeds that were originally planted.

Penco Malathion E-8 For Mite and Aphid Control on Elms

Aphid and mite build-up is often associated with the use of DDT in elm bark beetle and elm leafhopper control programs. This is due to the fact that DDT is not particularly effective against mites and aphids generally associated with elms but is damaging to beneficial predators and parasites which normally may keep these pests under control. For control of this situation use:

PENCO MALATHION E-8—

Another Pennsalt improvement:

- Contains 8 pounds active malathion per gallon—a pound per pint
- Forms stable emulsions with simple mixing in water
- Applicable to hydraulic and mist blower applications
- Use alone or in combination with Penco DDT Emulsion 34 in accordance with mixing instructions

Mixing Instructions

For combination foliage applications the amounts of Penco Malathion E-8 and Penco DDT Emulsion 34 may be determined from the following table. For applications of malathion alone, use at the rate of 1 pint in 100 gallons for hydraulic equipment or 6 pints in 100 gallons for mist blower applications. These recommendations are based on the same thorough coverage (gallonage per tree) as would be normally applied in elm bark beetle foliage applications. In other words, use the quantities of Penco Malathion E-8 and Penco DDT Emulsion 34, or of Penco Malathion E-8 alone, listed in the table opposite the quantity of spray you intend to use and bring up to volume with water. It is good practice to add the emulsion concentrate while filling the tank with water.

FOLIAGE APPLICATIONS

	1% DDT Hydraulic		6% DDT Mist Blower	
Desired Gallons of Spray	Quantity E-34*	Quantity Malathion E-8*	Quantity E-34	Quantity Malathion E-8*
25	5 ½ pt.	¼ pt.	4 ¼ gal.	1 ½ pt.
50	1 ½ gal.	½ pt.	8 ⅓ gal.	3 pt.
100	2 ¾ gal.	1 pt.	16 ¾ gal.	6 pt.
200	5 ½ gal.	2 pt.	33 ½ gal.	1 ½ gal.
300	8 ¼ gal.	3 pt.	50 ¼ gal.	2 ¼ gal.
400	11 gal.	4 pt.	67 gal.	3 gal.
500	13 ¾ gal.	5 pt.	83 ¾ gal.	3 ¾ gal.

* 8 pints equals 1 gallon

CAUTION: Malathion and DDT are harmful if swallowed, inhaled, or absorbed through the skin. Prevent inhalation or contact with skin or clothing. Avoid contamination of feed and food products. Do not leave within reach of children. Read product labels carefully before handling or using.

Sweet Gum and Tupelo Gum

There are two queer trees native to the southern counties of Illinois. Sweet Gum, commonly called Red Gum and a member of the Witch Hazel family, now has only three close relatives but fossils of 20 extinct species have been found in western America, Europe, Siberia, Alaska and Greenland. Storax, the fragrant resinous liquid used in perfumes, is obtained from a species in Asia Minor and our tree, when its bark is cut, exudes a yellowish balsam-like gum that is a substitute for storax. The glossy aromatic star-shaped leaves, with 5 to 7 pointed lobes, are gorgeously colored in autumn—scarlet with tints of orange, yellow and purple—and it should be planted more often as a shade tree.

Sweet gum ranges from Connecticut to Florida and west to Missouri and eastern Texas, usually in rich bottomlands where it may occur in pure stands of very tall, very straight trees with small crowns of slender branches at the top. In pioneer days, in the Wabash valley, there were sweet gums 5 feet in diameter that towered to a total height from 150 to 165 feet and had a clear cylindrical bole of 80 feet or more before there was a branch. The twigs have a star-shaped pith and, as they grow older, change from orange or reddish brown to gray, with peculiar corky wings. The pollen-producing flowers are compact heads along a stalk 2 or 3 inches long and, on the same tree, the female flowers are greenish balls that hang on long threadlike stems. These are followed by seed balls with a number of spiny beaked capsules each containing one or two winged seeds. These brown bur-like seed balls remind you of the sycamore.

The hard fine-grained wood is reddish brown, often beautifully patterned with darker streaks. Its texture and satiny luster make it valuable for interior trim, panels in doors and walls, furniture and cigar boxes. In addition to many other uses it is one of the chief sources of plywood, frequently sold abroad under such names as "satin walnut."

Tupelo Gum, also called Water Tupelo and Cotton Gum, grows in cypress swamps along the coasts from Virginia to Florida, west to southeastern Texas, and up the Mississippi valley to the southern tip of Illinois. Its only close relatives are the Black Tupelo or Sour Gum found here in Cook County, four species in our southeastern states, another in central China and one in the Indo-Malayan region. Fossils of about 30 species have been found in preglacial rocks throughout the North Temperate and Arctic zones.

Tupelo gum, like the bald cypress and other trees that grow in water, has a flaring buttressed base and wide-spreading roots. Frequently 80 to 100 feet tall and 3 or 4 feet in diameter, it has a long clear bole topped by a narrow crown of short spreading branches and large oval leaves. It is an eery experience to glide in a dugout canoe thru the silent dimness of a cypress and tupelo swamp where the dark water is dappled here and there with patches of sunlight and the conical cypress knees cluster like hooded gnomes around their majestic parents.

The tupelo has a purple plum-like fruit with acrid flesh and a flat pit with 10 wing-like ridges. Large quantities of these seeds are produced each year and float away on the water. The wood is nearly white and widely used for crates and boxes or as veneer for berry boxes. Light and weak but difficult to split, it makes good planks for warehouse floors and platforms. The exceptionally light wood in the swollen butts is used as floats for fish nets.

It is interesting to note how many of our trees have kinfolks in China.

Nature Bulletin,
Cook County Forest Preserve, Ill.

Keep Fruit Off Lawns With Dinitro Spray

Thanks to horticultural science, home owners can now get rid of mulberries, wild cherries, and other undesirable fruit without sacrificing the shade from the tree.

C. W. Ellenwood of the Ohio Agricultural Experiment Station says a chemical known as "dinitro" will perform the trick with a minimum of labor and expense.

Dinitro is merely a chemical thinning material used by commercial orchardists to reduce heavy fruit stand and increase the size of fruits. It comes in either a dry form or as a heavy liquid.

"Use dinitro at 4 times the concentration given for chemical thinning," Ellenwood recommends. "The proper time to spray is when the tree is in full bloom."

Ellenwood adds that dinitro will not permanently harm the tree, but will merely cause the blossoms to drop off before the fruit has a chance to set.

An Unverified Report From Chicago On Injections

By injecting a new chemical into trees in the same general way as humans get blood transfusions, a specialist here believes that the plagues which currently threaten to wipe out several species of the most valuable and popular American shade trees can be halted.

The diseases are Dutch elm, phloem necrosis and oak wilt which have reached epidemic proportions in some sections of the country.

"Intravenous" treatment of trees often has impressed tree surgeons as potentially a more effective stratagem for treatment than merely spraying their leaves. But the refusal of trees to assimilate fluids in this manner has been an insurmountable obstacle which Dr. Howard D. Salins of the Flax and Fiber Institute *apparently has overcome.*

After several years of experimentation in this area, Dr. Salins has developed a solution of gaseous nitrogen in a colloidal organic solvent which, he reported, mixes readily with the sap and other tree fluids.

Called *kemosol,* the new product is non-poisonous and noninflammable.

Injected at Fork

The afflicted oak and elm trees take the solution from a container mounted at the first fork. It drains into a tube penetrating deeply into the trunk and then into the wood under the bark and also the heartwood.

Sometimes a gallon of the opalescent, light yellow liquid—the usual dose—will be absorbed within 12 hours, but it frequently takes much longer, depending upon the characteristics of the individual tree.

Dr. Salins believes that the "drug" acts as a catalyst and a solvent, and as it is carried by the tree's own circulatory system it reverses the blocking action of the organisms which are believed literally to choke a tree to death.

The elm disease may kill its victim in a matter of weeks, although it sometimes takes longer. In Dutch elm disease, the leaves turn yellow or dry out and fall off. It may start with a branch or two and then spread.

Oak Reaction Rapid

The elm phloem necrosis, which is named after the clotting action it is believed to cause within the tree, often blights the top first, followed by a deterioration of the roots and death.

Onslaught of the oak wilt is even more dramatic, the leaves of a stricken tree wilting suddenly and the tree dying in from 12 hours to seven days. A virus has been blamed and the disease is considered by some to be highly contagious.

Dr. Salins believes that human and plant ailments may be related more closely than is usually suspected. He has sought a treatment for the tree diseases with the same basic approach as research into some diseases of the human circulatory system.

Noting that scientists at the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Me., are currently studying spruce burls, which have been identified as tree tumors that grow to the size of a barrel, for clues to cancer, Dr. Salin believes that discoveries in methods for checking tree circulatory ailments may contribute to the solution of human maladies in the same category.

He points out that oak wilt symptoms are strikingly like those of coronary thrombosis in humans, with the sudden and catastrophic blocking of the circulation.

Dr. Salins varies his formula somewhat for the oaks and elms so as to make it compatible with the tree sap and protoplasm, and research is progressing on its possible adaptation to the treatment of other tree diseases.

It has been noted in the trees which he has experimentally treated near here for several years that not only do the "transfusions" halt the diseases, but they may confer an immunity.

In further research, Dr. Salins hopes to establish that healthy trees may be "vaccinated" and protected for a year or more against the blights, or even that a basis for stopping the ravages of diseases menacing the nation's forests may be found in a treatment that confers lifetime immunity to the trees.

Garden Section,
The Cleveland Plain Dealer

Get Leaves The Easy Way

The photograph (right) graphically shows the fine leaf chaff produced by pulverizing a packed bushel of leaves with a Turbo Jet power leaf mill. Note that there are no large pieces of leaf remaining—for the Turbo Jet pulverizes leaves *completely,* reducing them to a granular consistency. The exact size of these particles depends on the type and condition of the leaves. Leaves from such trees as Maples and Elms produce chaff of less bulk and fine particles approaching the consistency of dust, whereas such coarse, pulpy leaves as Oak and Magnolia result in chaff of larger sized particles and greater bulk. Generally, leaves grown in southern climates will also provide a greater amount of chaff than those from northern climates, and wetter leaves result in more chaff of larger particles than dry leaves. Under average circumstances, from one to two bushels of leaves will produce a quart of such chaff.

In normal operation, the chaff is blown back into the lawn as the machine is working, to provide an almost invisible mulch. However, attachments are available for collecting and bagging this chaff for later use on planting beds, around shrubs, etc., if desired. Once deposited on a bed, the chaff will not be blown out onto the lawn by the wind as will whole leaves; the chaff will not shed rain water as will leaves, but will permit the water to penetrate immediately into the ground; and because it is so finely pulverized the chaff will go to work at once to provide a mulch for the beds Because dry leaves pulverize more satisfactorily and produce a finer chaff than wet leaves, the manufacturer stresses the importance of utilizing the Turbo Jet's unique "blower" action provided by the discharge stream to aerate and dry wet leaves before pulverizing. The discharge air stream is designed to be used to "fluff" and blow or tumble wet leaves across a lawn, so as to break up the laminations of wet leaves and thoroughly aerate them, dispersing excess moisture. This exclusive Turbo Jet feature permits the operator to quickly and easily dry out wet leaves, preparing them for the most efficient pulverization. Thus Turbo Jet is not confined by weather conditions, but in effect can "make its own" pulverizing conditions. (See Ad page 19).

Many users report that Turbo Jet pays for itself in just one season by speeding up and cutting the cost of leaf removal. Literature available from the company fully describes the Turbo Jet and how it works. The Turbo Jet Mfg. Co., 22 Bowman Terrace, Cincinnati 29, Ohio.

PLANT AMERICA—WISELY

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BASAL BARK TREATMENT IS AN IMPORTANT TOOL FOR RIGHT-OF-WAY MAINTENANCE

Fresh-cut stumps may be treated any month in the year. No troublesome sprouts and suckers will appear—provided the entire stump area, including bark, cut surface and all exposed roots, has been thoroughly drenched with the spray.

Basal bark treatment requires all-around coverage of the basal area from the ground line upward 15 inches. Wet thoroughly until run-down or run-off is apparent. This method controls small brush and scrub trees in any season.

Spraying with Dow brush killers controls trees and brush at low cost... results are long-lasting

Basal bark treatment of brush and trees fills an important place in a year-around brush control program. Effective during any month in the year, this practice is useful in the growing season as a follow-up to foliage treatment to control resistant species and to take care of "misses"and new growths. In other seasons—even during the winter months—application of Esteron® Brush Killer or Esteron 245 in oil to the trunk base of standing trees or to axe frills made in the bark gives long-lasting results. Regrowth is reduced to a minimum. Frill application is economical on large, thick-barked trees—basal bark spraying on younger, smaller ones and on brush. Both methods have proved effective over a wide range of woody species in all sections of the country in all seasons. Spraying cut stumps to prevent resprouting may also be done at any time of the year.

Esteron Brush Killer combines the action of powerful, low-volatility esters of 2,4-D and 2,4,5-T. Esteron 245 contains this type ester of 2,4,5-T only. Ask your supplier how these excellent Dow products can give you positive brush control at low cost. Or write THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan. In Canada: Dow Chemical of Canada, Limited, Toronto, Canada.

you can depend on DOW AGRICULTURAL CHEMICALS DOW

Report On Another Bald Cypress

A winter shot of the Bald Cypress on Rt. 224 near Poland, Ohio

3237 Maffett Street
Muskegon Heights, Mich.
July 13th, 1954

Dear Ed:

Regarding the northernmost stations of *Taxodium distichum,* there is one near the bell tower on the Michigan State Campus which is as large or larger than the ones Mr. Frantz reported from Niles, Michigan. Enclosed are two photos of a very large specimen that grows in your own back yard. This Bald Cypress is growing just south of U. S. 224 a mile or two east of Poland, Ohio. I didn't measure this tree but I'll venture to say it must be the largest of it's species growing so far north of it's natural range. A lady living nearby says it was struck by lightning a few years ago but recovered. In the picture you can see how a new top was formed. Does anyone from the Youngstown area know it's age? It is quite close to the road, I hope the Highway department does not decide it must be removed.

Yours Truly,
Bill Brenneman

The trunk of the Poland, Ohio, Bald Cypress indicates a very sizeable and aged tree.

● If your chain saw, no matter what make, is losing its zip...if production is falling off and stops for repairs increasing...see your dealer about an expert motor tune-up and OREGON®-*IZING* your saw. Have him install an OREGON® Chain, an OREGON ARMOR-TIP® BAR, an OREGON® Outer End Handle. It pays to keep your motor tuned, to OREGON®-*IZE* your saw...in economy and performance.

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OREGON Saw Chain Corp.
SAW CHAIN SPECIALISTS
8816 S. E. 17th Ave., Portland 2, Ore.

New Homelite Saw

A completely new chain saw—lighter in weight . . . faster cutting . . . easier to handle — has been announced by Homelite Corporation, Port Chester, New York. Designed for every type of fast, money-saving cutting, the new 22 pound, 3. 5 brake horsepower Homelite Model 17 Chain Saw makes land clearing or production cutting a much more profitable occupation . . . enables one man to do all the cutting in less time and with less effort than ever before.

According to the manufacturer, one man with a Homelite Model 17 Chain Saw can do as much money-saving work in an hour as two men, with a hand saw, in a day. Light as a feather but packed with power—more power per pound than any other chain saw, the Model 17 slices through an 18 inch tree in as little as 18 seconds. . . fells trees 4 feet or more in diameter quickly and easily.

Big features include: automatic clutch, all-angle diaphragm carburetion, positive chain lubrication, quick starting, weather-proof ignition, rugged and simple design and money-saving dependability. Straight blades are available in sizes from 15" to 36"; plunge-cut bow saw attachments, for one or two-man operation, are available in 14" and 18" sizes.

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Custom Grown Trees, Tailored For Scientific Application On City Streets

Hophornbeam (Ostrya virginiana) One of the finest of all small street trees.

OSTRYA VIRGINIANA
5'-6', 6'-8', 8'-10'

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6'-8'

TILIA CORDATA
6'-8'

KWANZAN CHERRY
6' Stems

GLOBE NORWAY MAPLE
7' Stems

IRISH NORWAY MAPLE
5'-6', 6'-8'

CLEVELAND NORWAY MAPLE
8'-10', 6'-8'

IDAHO LOCUST
6'-8'

FRUITLESS MULBERRY
6'-8', 8'-10, 10'-12'

LAVALLE HAWTHORN
6'-8', 8'-10'

WASHINGTON HAWTHORN
6'-8', 8'-10'

PAULS SCARLET HAWTHORN
6'-8', 8'-10', 10'-12'

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Oregon Announces New 50' Chain Reel

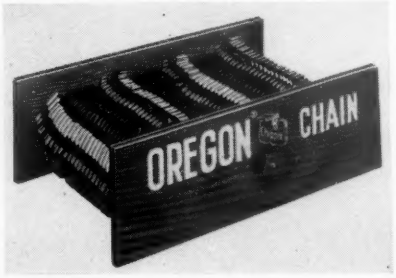
OREGON ® Chipper, Chisel and Crosscut Saw Chains are now available to users and dealers in fifty foot reels.

According to the manufacturer, Oregon Saw Chain Corporation, Portland, Oregon, the new chain package has been designed to meet a growing tendency among large purchasers to buy cutting chain in reels rather than cut lengths.

"Our fifty foot reel answers the demand for units of chain between our heavier one hundred foot reel and lengths of chain packaged to fit a given make of saw and length of bar," says Gordon L. McDowell, sales manager for the company. "It enables the small dealer to offer his customers a greater chain selection with less inventory and investment than heretofore. It provides the large users of any of our nineteen types of chain with a handy chain supply from which he can make up his own cut lengths."

Besides easy handling, the new reel stores compactly, and leaves the factory complete with emergency and spare parts kits, and filing instructions.

Added advantage is the acceptability of fifty foot reels of small pitch and lighter gauge OREGON chains for parcel post shipment to first class post offices.



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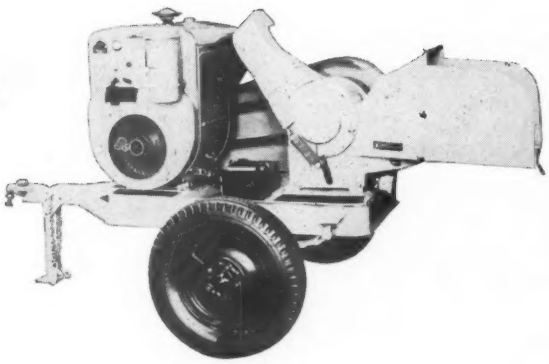

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Trees...

Auto Fumes Killing 130 Year Old Paris Trees

The Bois de Boulogne, since Napoleon's day the favorite park of Parisians, is choking to death.

The murderers are motorists whose gasoline fumes asphyxiate the 130 year old oaks, maples, pines, birches, and elm trees, and those who park their cars on tree roots.

The 2,200 acre woodland is all that remains of the magnificent Rouvray forest which stretched in Gallo-Roman times across Paris to the Buttes de Montmartre. And if the city fathers do not stop the motorists, the Bois de Boulogne will soon look as it did in 1815 after thousands of English and Prussian troops, had bivouacked in it: half jungle and half desert.

Noble Hunting Reserve

Under the royal regime, the park on western outskirts of Paris was a hunting reserve for the nobility and a rendezvous for cavaliers and their mistresses. In the 1500s, King Francois I erected a chateau in the forest.

But Napoleon III altered the character of the bois by ceding it to the city of Paris around 1860. The public park rapidly became the most popular promenade for strollers, carriages, and nature lovers. The French capital's great architect, Baron Haussmann, laid down 60 miles of shaded lanes and alleys.

Then came the automobile. Today, tens of thousands of cars, buses, and motor bikes drive thru the Bois de Boulogne on the Allee de Longchamp every day on their way to the Auto Route de l'Ouest, leading to Versailles, SHAPE and Normandy.

Park at Race Track

Other thousands of automobilists go daily to the Longchamp race track in the bois. They park on the grass on the edges of the track. Police have even found mechanics overhauling motors in the Bois de Boulogne.

Except for small patches of forest planted around 1870, the park's trees are suffering from age as well as gas fumes. The Paris park department is planting young oaks, beeches, cedars, pines, and Douglas fir trees to replace the dying centenarians. Each year, 400 acres are fenced off to protect the young trees. But these nurseries also suffer from the fumes.

Courtesy Harold S. Wagner,
Akron Metropolitan Park Dist., Ohio

Sycamore Blight and Other Leaf Diseases

By Malcolm A. McKenzie
Director of Shade Tree Laboratories, University of Massachusetts

The shriveled leaves prevalent on sycamore trees now are a result of fungus infection which causes a disease commonly known as sycamore blight. The disease is particularly severe this year because record breaking rains have accompanied the maturing of overwintering fungus spores and new foliage development.

Premature defoliation commonly occurs under conditions favorable to the spread of the disease fungus from cankers on dead twigs to new leaves. The growth of trees is reduced and distorted, but outright death of sycamores from the blight is rare. Ordinarily, later in the growing season, a degree of recovery from disease damage is achieved by new growth.

The disease also is serious on white oaks this spring. Additional foliage of both oak and sycamore may become infected from contact with contaminated leaves if conditions are favorable during the summer.

Fungus diseases on leaves of other shade and ornamental trees also are especially prevalent this season. Elms and maple foliage have shown early evidence of leaf injury which may become intensified on foliage of certain trees during summer. Diseases like maple wilt and Dutch elm disease are caused by fungus infection within water-conducting tissues and although affected trees may sometimes appear similar to trees with foliage blights, the latter troubles are much less destructive in most instances.

Fungus pests associated with leaf diseases or fhe wilts just mentioned should not be confused with insect pests commonly present on foliage now. In particular DDT used widely to control leaf eating insects is not effective for direct control of disease fungi.

For highly prized ornamental or shade trees a special spray program is needed to give satisfactory control of leaf fungi, and pruning and burning of dead parts may also be helpful.

BUCKEYE CORNERS by Alex Cook

Cartoon reproduced courtesy Alex Cook and the Cleveland Plain Dealer.

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Maple Wilt

(Coninued from page 6)

of maple have been reported as variously affected, but less vulnerable than Norway Maple.

Historical Review

The first report of the maple wilt disease was made by Rankin (17) in 1914. He attributed a wilt disease of hard maple near Claverak, New York, to *Acrostalagmus* sp. Zimm (25) verified Rankin's observations and referred the organism to the genus verticillium in 1917. In Europe the disease was first reported on *Acer* sp. in 1920 at Laren, Holland (1), and in 1921, Bewley (2) reported inoculation of Sycamore Maple in England.

In 1923, Drayton (7) reported the disease had caused serious damage to Box Elder near Ottawa, Canada. More recently, affected trees have been found widely in the United States in eastern, middle Atlantic, middle western and far western states.

The disease runs a rapid course often ending in death of tree or parts attacked (6, 9, 17, 25). Old and young trees in high and low vigor are readily attacked and may die completely within a few months' time, or a limb at a time until entire tree is dead (18).

Infected sapwood becomes streaked with dark green or bluish-black discoloration (6, 9, 11, 17).

(Fig. 3) Verticillium Wilt disease in Sugar Maple (Sept. 6, 1950)

Relatively disease resistant maple varieties sometimes withstand the disease for years with varying success and without gerat injury.

Control Measures

Severely infected maples cannot be

(Continued on next page)

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saved. The only practical measures are to cut and burn these trees and replace them with wilt resistant species.

If wilting is relatively mild in a tree, it may be possible to prune affected parts and employ measures which will contribute to the general health of the tree such as the appropriate use of fertilizer. Also, during periods of dry weather adequate amounts of water should be made available to the tree roots.

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To the east of the Liberty Bell shrine the Federal government is buying up another three block section that is full of original Revolutionary landmarks. This is the Independence National Historical Park Project. All of the post-Revolution construction will be cleared out and the area will be just as it was in 1776. The word "restoration" is strictly verboten on this project because all of the very same buildings where Washington, Franklin, Morris, Hancock and company worked and planned are still there—the *originals,* not reconstructions, not restorations.

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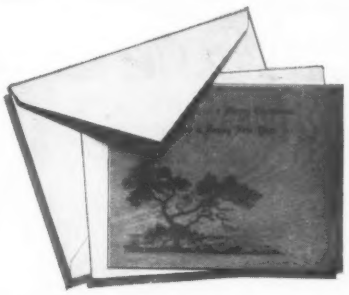

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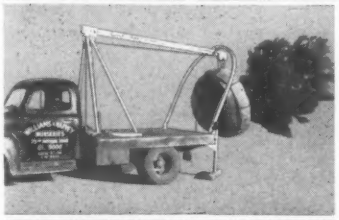

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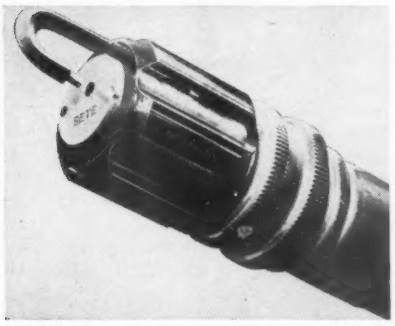
New Fog Jet Nozzle Increases Utility of Garden Hose

A simple new nozzle which can be attached to any standard garden hose greatly increases the utility of the hose for fire control and gardening purposes, according to Bete Fog Nozzle, Inc., Greenfield, Mass., its developer.

The new nozzle, called the "Mister Jet" Garden Hose Attachment, nearly doubles the length of straight stream that can be obtained from an ordinary garden hose nozzle, and a twist of the plastic handle changes the straight stream to an extremely fine fog in an instant.



These two characteristics—exceptionally far reaching straight stream and extra fine fog—make the "Mister Jet" nozzle a handy hose accessory for fire protection for the home and farm as well as in many industrial locations, according to the manufacturer. These same characteristics likewise have obvious advantages in gardening applications.

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Fog droplets created by this nozzle have many times the surface area of coarse droplets produced by ordinary nozzles, hence are many times more effective in fighting fires and in other fog applications. The nozzle is non-clogging with no internal parts to plug up or get out of order.

The "Mister Jet" Garden Hose Attachment is made of aluminum alloy with a shockproof red handle. The pin is stainless steel, extra strong and rustproof. The unit lists at $1.95

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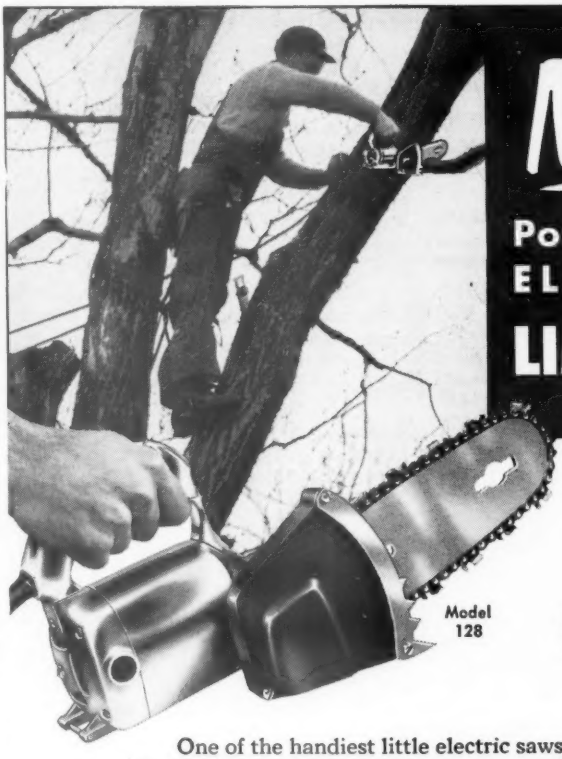

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Box 426, Wooster, Ohio

ATLANTIC CITY MEETINGS

Some folks have attended every shade tree conference — all twenty-seven of them; the Conference did not meet during two of the war years. A few of the faithfuls have dropped by the wayside in the past thirty years but most all who possibly can will be at Atlantic City for the 30th National Shade Tree Conference when it meets August 30 to September 3.

The National Arborist Association holds its 16th annual meeting this year in conjunction with the National Shade Tree Conference. The Association meetings will be in the morning and afternoon of Monday, August 30, with a dinner Tuesday evening for the members and their wives. A high percent of National Arborist Association members have attended every meeting.

People attend meetings to learn, to have fun and entertainment, and to see and visit with their friends. A Shade Tree Conference is a place where all these benefits and pleasures are to be had. A look at the educational program should convince the most skeptical that nowhere else can one learn so much about tree care in such a short time. Current tree problems of the day will be discussed by authorities in the field—entomologists, plant pathologists, soils specialists, horticulturists and arborists. There is no place but a shade tree conference where so much tree-care equipment can be seen.

Much of the good of attending these meetings comes from association with others who are in the same kind of work. At home we have our friends who usually are associated with us in church, lodge, service club, civic and business activities. They don't know anything about moving trees, hazards in take-downs, Dutch elm disease, scale, line clearance and a hundred other tree operations. We can't talk shop with them. But at a shade tree conference we meet dozens of old friends and some new ones who earn their bread like we do. We are so starved for that kind of visiting that many of us stay up all night and just talk. This is something not to be had by staying at home and reading about the meetings.

There will be about 600 people all interested in some phase of tree preservation at Atlantic City. They will get some ideas that will be useful and they will have a grand time doing things together. They will go home with renewed enthusiasm and increased respect for their profession.

Come to the Atlantic City meetings for ideas and inspiration, for fellowship with your own kind, for good entertainment, and for a LIFT. That's why you see so many of the same people back again year after year.

* * * *

DUTCH ELM DISEASE

It is history that the Dutch elm disease was found at Cleveland in 1930 by Charles F. Irish. The infected trees were eradicated by governmental agencies. Later Dutch elm disease was found to be widespread in the east and it soon was back in the midwest in the general area of where it was found originally.

After seeing thousands of elms killed in the midwest by phloem necrosis, Dutch elm disease has seemed fairly mild in comparison. Now it appears that the malady from Europe may have been misjudged. Dutch elm disease this year is striking out with great vigor and is living up to its reputation as a killer of elms.

More Dutch elm disease this year than in previous years is generally apparent throughout the midwest wherever the disease occurs but the greatest increase which has come to my attention is in the St. Louis area. Phloem necrosis has occurred in St. Louis and around there for a long time but it was not until three or four years ago that Dutch elm disease was found. It is being very conservative to estimate that 5,000 elms were showing symptoms of Dutch elm disease in late June of this year. The diseased trees were on streets, lawns, along roads, in parks, golf courses, fields, ravines, everywhere. In many locations in the county it was impossible to look in any direction without viewing several diseased trees. Fortunately elms are not the only trees of the area; there are many fine oaks, sweet gums, some maples and honeylocusts.

There has been a terrific increase in bark beetle population in the St. Louis area which accounts for the Dutch elm disease epidemic. Many elms killed by phloem necrosis have remained standing and served as beetle-breeding trees. The extreme drought for the past several years has weakened trees to the point where they are susceptible to beetles. Acres of land have been cleared for construction work using bulldozers to push the trees into piles where they remained for months. Elm trees treated this way are wonderful places for beetles to breed. Millions of beetles, plenty of the Dutch elm fungus for inoculation, and the result is a real epidemic.

There are many other communities with a similar problem developing. It is difficult to get active interest aroused in a Dutch elm disease control program until large numbers of dead and dying trees are apparent. Then it is a real problem. Sanitation and spraying should have started three to four years previously.

* * * *

What's Wrong With Soft Maples?

Many Silver Maples in the midwest aren't right and they haven't been for the past couple of years. Some trees have died. But usually it is a case of dead wood and not death of entire trees. From a quarter to half of the branches have died in trees along streets and roads in many communities. These branches are dead in the spring and they don't leaf out.

Some folks are attributing this Soft Maple condition to the effects of drought and I am inclined to agree with them. Actually it may be winter injury of trees so weakened by extreme drought as to make the tissues susceptible to injury even by comparatively mild temperatures.

See HELLER-GRO at A. C.

Because of the wide use of HELLER-GRO by members of the National Shade Tree Conference during this growing season and the great interest expressed by others, you will see HELLER-GRO at the Atlantic City Convention. Craig Halvorson is the New England distributor for this new paste fertilizer and he will be in charge of the booth, ready to tell the members about his results with all kinds of feeding. He will be assisted by several others who have adopted HELLER-GRO for their feeding. You will remember this product is the completely soluble paste fertilizer which is made from USP grade chemicals exclusively.

Tree Trimming

(Continued from page 8)

derful relations with the public and absolutely no complaints from them. We have had no accidents either to the men or to the utility plant.

The improved working conditions for the men has created a great incentive to do higher quality work at less cost and thus protect our public relations and give the proper service to our public for which we are being paid.

for QUICK SHADE plant
a MORAINE LOCUST
(PLANT PATENT 836)
Graceful, new, fast-growing Moraine Locust shade tree is thornless, seedless, hardy. Lawn grass grows luxuriantly beneath its light, lacy shade.
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Thirteenth Annual Conference On Roadside Development October 5-8

The Thirteenth Annual Short Course on Roadside Development will be held on the above dates, starting at 2:00 p.m. on Tuesday, October 5, 1954. Registration will begin at 9:00 a.m., in the main corridor of the Departments of State Building, Columbus, Ohio.

This preliminary announcement is being sent out in advance so that you can MARK YOUR CALENDAR AND MAKE YOUR PLANS TO ATTEND.

The inspection trip, a regular part of the Short Course, will be conducted on Thursday, October 7, and Friday, October 8.

A detailed program will be mailed to you later. As formerly, the thirteenth conference, will produce the best of speakers, with topics suited to the needs and desires of the various organizations, engineers, landscape personnel and garden clubs.

The following hotels located in downtown Columbus have, in the past, furnished accommodations to Short Course visitors (other hotels less conveniently located are available also):

Deshler-Hilton	Fort Hayes
Neil House	Seneca
Southern	Virginia

This year, in an effort to secure for you the kind of hotel accommodations you want, a block of rooms has been reserved at the Deshler-Hilton in the name of the Short Course on Roadside Development. If you would prefer one of these rooms, write your needs to Mr. Wilbur J. Garmhausen, Chief Landscape Architect, Ohio Department of Highways, Columbus 15, Ohio, and a reservation will be made in your name, with a confirmation sent to you from the hotel. This is a limited group of rooms to be assigned on a first come - first serve basis. Prices are as follows: Singles $6.00 to $14.00; Doubles $9.00 to $15.00; Twin beds $10.00 to $16.00. MAKE YOUR RESERVATIONS EARLY to avoid disappointment.

PRATT'S Sprays

Pratt's Sprays are formulated for use in mist or hydraulic sprayers to give the greatest degree of safety and effectiveness for shade trees and evergreens.

PRATT'S SUMMER SPRA-OIL—A miscible 97% white oil type summer oil. For use in the control of red spider, scale crawlers, white fly and as an effective ovicide, also used as a dormant spray for evergreens where a lighter oil is desired.

D-X INSECT SPRAY—One of the most effective non-poisonous sprays for sucking and chewing insects of shade trees as well as fruit trees. Contains rotenone, pyrethrum and piperonyl cyclonene for great effectiveness and safety.

PRATT'S DDT SPRAYS—Pratt's DDT sprays are especially formulated for the safety and effectiveness demanded in shade tree work. Pratt's Emulsifiable 25% DDT —Pratt's S-30% DDT and Pratt's dry wettable 50% DDT.

PRATT'S 50% MALATHION SPRAY—One of the most effective of the newer miticides. Is used against a wide range of insects at 1 to 600 dilution. Pratt's formulation assures you of the safest form of Malathion for shade tree work.

Order Pratt's Sprays from your distributor. Bulletins available — Pratt's Oil Sprays, Pratt's Sprays for Mist Blowers and Hydraulic Spraying.

★

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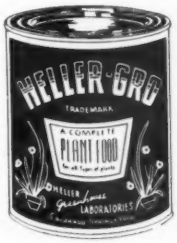
Paterson, N. J.

HELLER-GRO
REG. U. S. PAT. OFF.
COMPLETE PLANT FOOD

GET BEST RESULTS
FEED WITH HELLER-GRO

Since its introduction at last year's convention, HELLER-GRO has been widely used by members of the National Shade Tree Conference with fine results everywhere. Visit the HELLER-GRO Booth at Atlantic City and let Mr. C. L. Halvorson, New England distributor for HELLER-GRO, tell you all about it.

Since 1939, HELLER-GRO, the safe plant food that cannot burn, has fed the trees and turf of the Rocky Mountain Region. Made from USP grade chemicals only, this highly concentrated Paste fertilizer is immediately and completely soluble.



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95 King Street East Toronto, Ontario, Canada
DISTRIBUTORSHIPS AVAILABLE

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1916 Franklin St., Colorado Springs, Colorado

Tree & Utility Conference

(Continued from page 5)

G. H. Fiedler
Rochester Gas and Electric Corp.
Rochester, N. Y.

M. H. Pratt
Niagara Mohawk Power Corp.
Syracuse, N. Y.

Illuminating Engineering Society — Committee on Street Lighting
Kirk M. Reid, Chairman
General Electric Co.
Nela Park
Cleveland 12, Ohio

Otto Ortleib
Street Lighting Engineer
City of Trenton
Trenton, N. J.

Henry Osborn
Traffic Engineer
City of Buffalo
Buffalo, N. Y.

David Baldwin
National Safety Council
Chicago, Ill.

National Shade Tree Conference — Committee on Shade Tree Selection.

Edward H. Scanlon, Chairman
Editor, TREES Magazine
Olmsted Falls, Ohio

Dr. Henry T. Skinner, Director
U. S. National Arboretum
U. S. Dept. of Agriculture
Washington, D. C.

Harold O. Perkins
Dept. of Horticulture
University of Connecticut
Storrs, Conn.

Dr. Donald Wyman
Horticulturist
Arnold Arboretum
Jamaica Plan, Mass.

Maunsell Van Rensselaer, Director
Saratoga Horticultural Foundation
Saratoga, Calif.

Jake Gerling
Dept. of Parks
24 Bryan St.
Rochester 13, N. Y.

Harry Turner, Secretary
Shade Tree Commission
East Orange, N. J.

It is planned to record and publish the proceedings of the meeting. They will be available at cost to anyone interested in the findings of the group. An indication of the number of copies that will be desired would help the committee in making publication plans. Convey your needs to anyone of the three Co-chairmen.

I'll Bet This Was Good!

Harry Webster, Industrial Sales Manager for H. K. Porter, Inc., presents a Porter No. 2 Forester pruning tool to Gov. Cristian Herter of Massachusetts. Tom Russell, Executive Secretary of the Somerville C. of C. listens as Harry suggests the tool be used to trim the budget and cut the Commie snakes out of Government.

HKP

PORTER PRUNERS

Serve Professional TREE MEN *BETTER!*

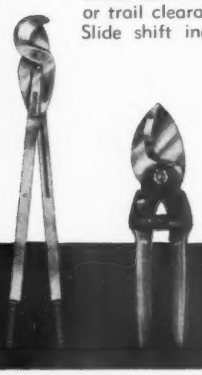
Professional tree men find in Porter Pruners the qualities they themselves would specify—easy working, better results, durability in years of service. Here's a quick sampling:

Pole Pruners: Rugged yet lightweight head with sharp tool steel forged blades—cut close without bark damage—promote healing—cuts up to 1" green wood.

New Type M Pruner Head has now been further improved to give wider opening in slot, better spring action, etc. Ask to see these improvements suggested by the treemen.

Forester: Large size cuts up to 2" green wood—unbeatable for year 'round cutting, pruning, brush or trail clearance, also for dehorning young cattle. Slide shift increases cutting power up to 80%.

One-Hand Pruners: DuraCut and DuraShear—the ultimate in easy, fast, clean work on shrubs, bushes, vines—Plastisol cushion grips prevent slipping and blisters.

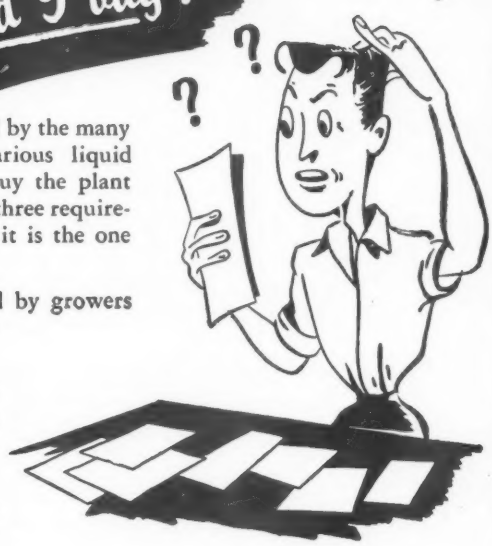


Your supplier has them or can get them. Write for complete catalog.

See Harry Webster
Booth 13 — Atlantic City

H. K. PORTER, INC.
Somerville 43, Mass.

"What liquid plant food should I buy?"

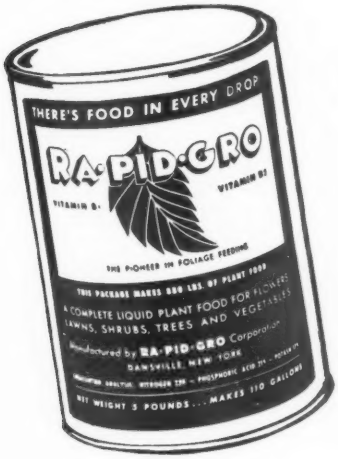


Are you, too, troubled by the many claims made for various liquid plant foods? If so, buy the plant food that meets these three requirements. Make certain it is the one that is:

1. Tested and proved by growers and gardeners for at least 10 years.
2. Recommended by horticultural experts and universities who have tested it.
3. Used and recommended by *your* nurseryman.

RA-PID-GRO is the only liquid plant food that answers all three requirements. No other plant food does. And no one can make RA-PID-GRO except the RA-PID-GRO CORPORATION.

And here's the big pay off! It costs no more than substitutes; in fact, it costs much less, if you consider results.


THERE'S FOOD IN EVERY DROP
RA-PID-GRO
VITAMIN B1
VITAMIN B2
THE PIONEER IN FOLIAGE FEEDING
A COMPLETE LIQUID PLANT FOOD FOR FLOWERS LAWNS, SHRUBS, TREES AND VEGETABLES
Manufactured by RA-PID-GRO Corporation
DANSVILLE, NEW YORK
NET WEIGHT 3 POUNDS ... MAKES 110 GALLONS

NOTICE

Don't worry because of the late spring or drouth. Feed RA-PID-GRO every week for four feedings, then every two weeks till harvest. This will help greatly to counteract late planting or lack of rain.

Buy RA-PID-GRO *from your favorite store or nurseryman.*

PRICES	
1 lb.	$1.25
2 lbs.	2.35
5 lbs.	4.50
10 lbs.	8.75

(Analysis: 23-21-17)

RA-PID-GRO

RA-PID-GRO CORPORATION, Dansville, N. Y.

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A Balanced Diet for your Plants!

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TWELVE-INCH CHIPPER

HEAVY-DUTY TRAILER MODEL

Our new 12-inch Chipper can be supplied in the Trailer Model shown here or for mounting on truck, tractor or skids. The basic unit has a feed opening at the point of contact 12 inches wide by 8¾ inches high, 105 square inches in all, accommodating a large volume of brush.

As in all of our Chippers, a flywheel insures continuous and uniform chipping action, and the 11½ inch diameter rotor makes it possible to chip materials of larger size. Four tapered blades and tapered wedges, each 12 inches long, provide a definite safety factor. The Ford, 172, 4-cylinder Industrial engine, with Rockford clutch, furnishes 58 dyn. B.H.P. at 2400 RPM.

WRITE TO US AT JENKINTOWN, PA., FOR DETAILED SPECIFICATIONS, PRICES.

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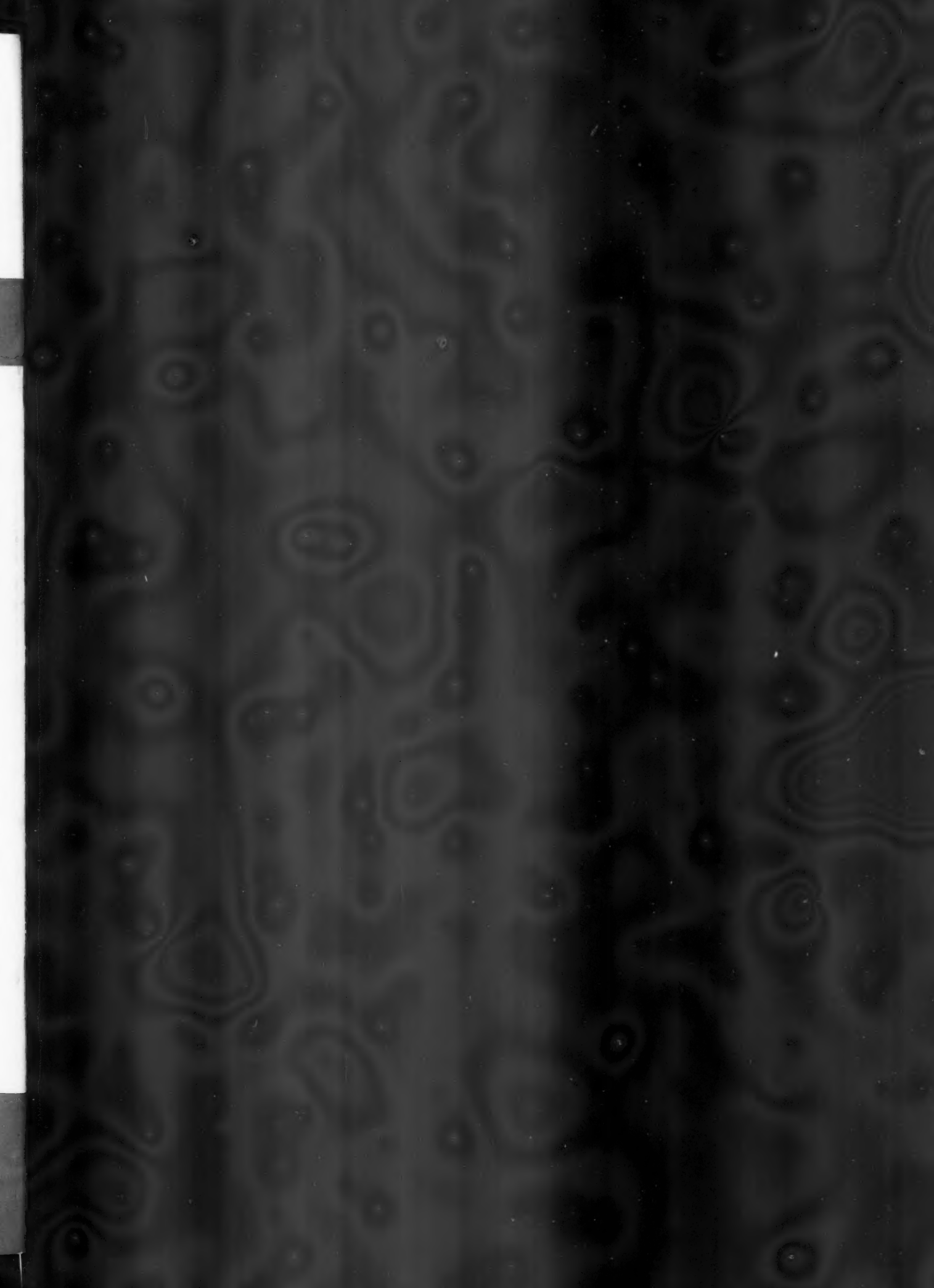
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